WEST Search History

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DATE: Monday, February 09, 2004

Hide?	Set Name	Query	Hit Count
	DB=EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ		
☐	L10	L9 not l7	1
☐	L9	L8 and absorption and maxim$3	2
☐	L8	optical and (trap$4 or tweezer)	1908
☐	L7	L5 and (absorption same maxim$3)	1
☐	L6	L5 and (absorption near2 maxim$3)	0
☐	L5	optical same (trap$4 or tweezer)	1218
	DB=PGPB,USPT; PLUR=YES; OP=ADJ		
☐	L4	L1 same (absorption near2 maxim$3)	6
☐	L3	L2 same maxim$3	6
☐	L2	L1 same absorption	72
☐	L1	optical near2 (trap$4 or tweezer)	802

END OF SEARCH HISTORY

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 * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 14:49:18 ON 09 FEB 2004

=> index bioscience
FILE 'DRUGMONOG' ACCESS NOT AUTHORIZED
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS,
       BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT,
       CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS, DDFB, DDFU,
       DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 14:49:42 ON 09 FEB 2004

68 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view
search error messages that display as 0* with SET DETAIL OFF.

=> s optical (2a)(trap#### or tweezer)
          8   FILE AGRICOLA
         19   FILE ANABSTR
          9   FILE AQUASCI
          8   FILE BIOBUSINESS
          3   FILE BIOCOMMERCE
        550   FILE BIOSIS
         18   FILE BIOTECHABS
         18   FILE BIOTECHDS
        136   FILE BIOTECHNO
         19   FILE CABA
          9   FILE CANCERLIT
       2870   FILE CAPLUS
         12   FILE CEABA-VTB
         12   FILE CEN
          2   FILE CIN
         27   FILE CONFSCI
          2   FILE CROPU
        156   FILE DISSABS
          8   FILE EMBAL
        343   FILE EMBASE
        273   FILE ESBIOBASE
        103   FILE FEDRIP
          2   FILE FROSTI
  37 FILES SEARCHED...
          2   FILE FSTA
          3   FILE GENBANK
        204   FILE IFIPAT
        219   FILE JICST-EPLUS
         96   FILE LIFESCI
          8   FILE MEDICONF
        452   FILE MEDLINE
        125   FILE NTIS
          2   FILE OCEAN
       1105   FILE PASCAL
          1   FILE PHIN
        111   FILE PROMT
       1939   FILE SCISEARCH
        131   FILE TOXCENTER
        697   FILE USPATFULL
         34   FILE USPAT2
        194   FILE WPIDS
  67 FILES SEARCHED...
        194   FILE WPINDEX
```

```
  41 FILES HAVE ONE OR MORE ANSWERS,    68 FILES SEARCHED IN STNINDEX

L1    QUE OPTICAL (2A)(TRAP#### OR TWEEZER)

=> s absorp##### (3a) maxim###
          11   FILE ADISCTI
           8   FILE ADISINSIGHT
           6   FILE ADISNEWS
         231   FILE AGRICOLA
         404   FILE ANABSTR
         383   FILE AQUASCI
         194   FILE BIOBUSINESS
        4560   FILE BIOSIS
         179   FILE BIOTECHABS
         179   FILE BIOTECHDS
         776   FILE BIOTECHNO
         801   FILE CABA
         171   FILE CANCERLIT
       40735   FILE CAPLUS
          76   FILE CEABA-VTB
           9   FILE CEN
          11   FILE CIN
           3   FILE CONFSCI
           2   FILE CROPB
          56   FILE CROPU
         429   FILE DISSABS
           6   FILE DDFB
         241   FILE DDFU
          70   FILE DGENE
           6   FILE DRUGB
           1   FILE IMSDRUGNEWS
         859   FILE DRUGU
           3   FILE IMSRESEARCH
          15   FILE EMBAL
        2578   FILE EMBASE
         936   FILE ESBIOBASE
          28   FILE FEDRIP
         101   FILE FROSTI
         102   FILE FSTA
  38 FILES SEARCHED...
          11   FILE HEALSAFE
        2064   FILE IFIPAT
        1266   FILE JICST-EPLUS
          29   FILE KOSMET
         955   FILE LIFESCI
        2739   FILE MEDLINE
         259   FILE NIOSHTIC
         290   FILE NTIS
          99   FILE OCEAN
        3085   FILE PASCAL
           1   FILE PHAR
           8   FILE PHIN
         338   FILE PROMT
         131   FILE RDISCLOSURE
        5106   FILE SCISEARCH
        1245   FILE TOXCENTER
       15619   FILE USPATFULL
         578   FILE USPAT2
          19   FILE VETU
        3795   FILE WPIDS
        3795   FILE WPINDEX

  55 FILES HAVE ONE OR MORE ANSWERS,    68 FILES SEARCHED IN STNINDEX

L2    QUE ABSORP##### (3A) MAXIM###
```

```
=> s l1 (l) l2
          2   FILE CAPLUS
  39 FILES SEARCHED...
          1   FILE PROMT
         27   FILE USPATFULL
          1   FILE USPAT2
  67 FILES SEARCHED...

   4 FILES HAVE ONE OR MORE ANSWERS,    68 FILES SEARCHED IN STNINDEX

L3   QUE L1 (L) L2

=> d rank
F1           27   USPATFULL
F2            2   CAPLUS
F3            1   PROMT
F4            1   USPAT2


=> file f3-4
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     3.42       3.63

FILE 'PROMT' ENTERED AT 14:53:01 ON 09 FEB 2004
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FILE 'USPAT2' ENTERED AT 14:53:01 ON 09 FEB 2004
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=> s l3
L4            2 L3

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5             2 DUP REM L4 (0 DUPLICATES REMOVED)
                 ANSWER '1' FROM FILE PROMT
                 ANSWER '2' FROM FILE USPAT2

=> file caplus promt
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     2.12       5.75

FILE 'CAPLUS' ENTERED AT 14:53:47 ON 09 FEB 2004
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=> s l3
L6            3 L3

=> dup rem l6
PROCESSING COMPLETED FOR L6
L7             3 DUP REM L6 (0 DUPLICATES REMOVED)
                 ANSWERS '1-2' FROM FILE CAPLUS
                 ANSWER '3' FROM FILE PROMT

=> d bib abs 1-3

L7   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2004 ACS on STN
```

AN 1981:558967 CAPLUS
DN 95:158967
TI Comparison of photoconductivity and optical spectra for trapped electrons in alcohol and amine glasses
AU Kato, Noriyuki; Akiyama, Koichi; Fueki, Kenji
CS Fac. Eng., Nagoya Univ., Nagoya, Japan
SO Journal of Physical Chemistry (1981), 85(21), 3087-9
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB The photocond. and **optical** spectra of **trapped** electrons were measured at 77 K for glassy alcs. (MeOH + 5% H2O, EtOH, 1-propanol, 1-butanol, and 2-propanol) and amines (diisopropylamine and 1,2-propanediamine). From comparison of both spectra, the optical spectrum was assigned to bound-bound and bound-free transitions for all of the matrixes studied. Excitation energies at the photocond. and optical **absorption maximum** are correlated with matrix polarity. Such a correlation was interpreted in terms of a trapped-electron model.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1963:6234 CAPLUS
DN 58:6234
OREF 58:1008c-d
TI Color centers in a cerium-containing silicate glass
AU Stroud, Jackson S.
CS Corning Glass Works, Corning, NY
SO Journal of Chemical Physics (1962), 37, 836-41
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA Unavailable
AB X-ray irradiation of glass containing 75 weight % SiO2, 25 weight % Na2O, produces color centers which absorb visible light. Ce in the glass prevents the formation of these centers. The nature of the centers and the mechanism by which Ce prevents their formation are studied by measuring the optical absorption changes caused by irradiation of glasses containing small concns. of Ce+++ and Ce4+. In Ce-free glass, **trapped** holes cause **optical absorption** bands with **maximum** near 4400 and 6200 A. By capturing holes, Ce+++ inhibits the formation of these 2 bands. The probability that a hole escapes capture by Ce+++ is exp-(-v3c3), where c3 is the Ce+++ concentration and v3 = (9 ± 2) + 104 cu. A. Trapped electrons cause an optical absorption band that has a maximum in the ultraviolet and that extends to 6000 A. in the visible. Ce4+ inhibits the formation of this band by capturing electrons.

L7 ANSWER 3 OF 3 PROMT COPYRIGHT 2004 Gale Group on STN

AN 2000:57338 PROMT
TI Manufacturers and Suppliers.(Alphabetical list of companies)
SO Lasers & Optronics, (Nov 1999) Vol. 18, No. 11, pp. S8.
ISSN: 0892-9947.
PB Cahners Publishing Company
DT Newsletter
LA English
WC 71777
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AB A
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                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                      -1.39      -1.39

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI, BIOBUSINESS,
       BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CANCERLIT,
       CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS, DDFB, DDFU,
       DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 14:55:14 ON 09 FEB 2004

68 FILES IN THE FILE LIST IN STNINDEX

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search error messages that display as 0* with SET DETAIL OFF.

=> s optical (l)(trap#### or tweezer)
          29   FILE AGRICOLA
          80   FILE ANABSTR
          51   FILE AQUASCI
          11   FILE BIOBUSINESS
           3   FILE BIOCOMMERCE
         798   FILE BIOSIS
          37   FILE BIOTECHABS
          37   FILE BIOTECHDS
         203   FILE BIOTECHNO
          87   FILE CABA
          22   FILE CANCERLIT
       10432   FILE CAPLUS
          30   FILE CEABA-VTB
          99   FILE CEN
           5   FILE CIN
          52   FILE CONFSCI
           1   FILE CROPB
          22   FILE CROPU
         818   FILE DISSABS
           1   FILE DDFU
         155   FILE DGENE
           9   FILE DRUGU
           9   FILE EMBAL
         605   FILE EMBASE
         419   FILE ESBIOBASE
         189   FILE FEDRIP
           9   FILE FROSTI
          15   FILE FSTA
           3   FILE GENBANK
        1227   FILE IFIPAT
         791   FILE JICST-EPLUS
           2   FILE KOSMET
         186   FILE LIFESCI
           9   FILE MEDICONF
  46 FILES SEARCHED...
         745   FILE MEDLINE
           7   FILE NIOSHTIC
         809   FILE NTIS
          28   FILE OCEAN
        4052   FILE PASCAL
           1   FILE PHIC
          10   FILE PHIN
        1114   FILE PROMT
          55   FILE RDISCLOSURE
        5561   FILE SCISEARCH
         467   FILE TOXCENTER
       29032   FILE USPATFULL
```

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       1565   FILE USPAT2
          1   FILE VETU
       1041   FILE WPIDS
       1041   FILE WPINDEX

  50 FILES HAVE ONE OR MORE ANSWERS,   68 FILES SEARCHED IN STNINDEX

L8   QUE OPTICAL (L)(TRAP#### OR TWEEZER)

=> s l8(l)l2
          3   FILE BIOSIS
          1   FILE BIOTECHNO
         95   FILE CAPLUS
          3   FILE DISSABS
          1   FILE DRUGU
          3   FILE EMBASE
          1   FILE ESBIOBASE
  38 FILES SEARCHED...
          1   FILE LIFESCI
          2   FILE MEDLINE
          3   FILE NTIS
          6   FILE PASCAL
          3   FILE PROMT
          4   FILE RDISCLOSURE
         18   FILE SCISEARCH
          1   FILE TOXCENTER
        712   FILE USPATFULL
         41   FILE USPAT2
          1   FILE WPIDS
  67 FILES SEARCHED...
          1   FILE WPINDEX

  19 FILES HAVE ONE OR MORE ANSWERS,   68 FILES SEARCHED IN STNINDEX

L9   QUE L8(L) L2

=> s optical (s)(trap#### or tweezer)
         27   FILE AGRICOLA
         80   FILE ANABSTR
         50   FILE AQUASCI
         11   FILE BIOBUSINESS
          3   FILE BIOCOMMERCE
        606   FILE BIOSIS
         37   FILE BIOTECHABS
         37   FILE BIOTECHDS
        203   FILE BIOTECHNO
         85   FILE CABA
         22   FILE CANCERLIT
       5745   FILE CAPLUS
         30   FILE CEABA-VTB
         29   FILE CEN
          3   FILE CIN
         52   FILE CONFSCI
          1   FILE CROPB
         14   FILE CROPU
        528   FILE DISSABS
          1   FILE DDFU
        155   FILE DGENE
          7   FILE DRUGU
          9   FILE EMBAL
        605   FILE EMBASE
        419   FILE ESBIOBASE
        208*  FILE FEDRIP
          9   FILE FROSTI
         15   FILE FSTA
```

```
          3   FILE GENBANK
        811   FILE IFIPAT
        532   FILE JICST-EPLUS
          2   FILE KOSMET
        185   FILE LIFESCI
          8   FILE MEDICONF
  46 FILES SEARCHED...
        544   FILE MEDLINE
          7   FILE NIOSHTIC
        739   FILE NTIS
         27   FILE OCEAN
       3258   FILE PASCAL
          5   FILE PHIN
        327   FILE PROMT
         49   FILE RDISCLOSURE
       5244   FILE SCISEARCH
        249   FILE TOXCENTER
       5044   FILE USPATFULL
        275   FILE USPAT2
          1   FILE VETU
        719   FILE WPIDS
        719   FILE WPINDEX

  49 FILES HAVE ONE OR MORE ANSWERS,    68 FILES SEARCHED IN STNINDEX

L10  QUE OPTICAL (S)(TRAP#### OR TWEEZER)

=> s l10(l)l2 not l3
          1   FILE BIOTECHNO
         35   FILE CAPLUS
          2   FILE DISSABS
  26 FILES SEARCHED...
          1   FILE DRUGU
          3   FILE EMBASE
          1   FILE ESBIOBASE
          0*  FILE FEDRIP
          1   FILE LIFESCI
          3   FILE NTIS
  50 FILES SEARCHED...
          6   FILE PASCAL
          3   FILE RDISCLOSURE
         18   FILE SCISEARCH
        128   FILE USPATFULL
          4   FILE USPAT2
  67 FILES SEARCHED...

  13 FILES HAVE ONE OR MORE ANSWERS,    68 FILES SEARCHED IN STNINDEX

L11  QUE L10(L) L2 NOT L3

=> d rank
F1          128   USPATFULL
F2           35   CAPLUS
F3           18   SCISEARCH
F4            6   PASCAL
F5            4   USPAT2
F6            3   EMBASE
F7            3   NTIS
F8            3   RDISCLOSURE
F9            2   DISSABS
F10           1   BIOTECHNO
F11           1   DRUGU
F12           1   ESBIOBASE
F13           1   LIFESCI
```

```
=> file f2-4 f6-13
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       4.56      29.23

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                         ENTRY    SESSION
CA SUBSCRIBER PRICE                                       0.00      -1.39

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=> s l11
L12          74 L11

=> dup rem l12
DUPLICATE IS NOT AVAILABLE IN 'RDISCLOSURE'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L12
L13          59 DUP REM L12 (15 DUPLICATES REMOVED)
                ANSWERS '1-35' FROM FILE CAPLUS
                ANSWERS '36-49' FROM FILE SCISEARCH
                ANSWERS '50-52' FROM FILE NTIS
                ANSWERS '53-55' FROM FILE RDISCLOSURE
                ANSWERS '56-57' FROM FILE DISSABS
                ANSWER '58' FROM FILE DRUGU
```

ANSWER '59' FROM FILE LIFESCI

=> d 1-37 59 bib abs

L13 ANSWER 1 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
AN 2000:614484 CAPLUS
DN 133:367154
TI A thin, composite sodium chloride dosimeter with diffuse reflected light spectrophotometric read out
AU Zagorski, Z. P.; Rafalski, A.
CS Department of Radiation Chemistry and Technology, Institute of Nuclear Chemistry and Technology, Warsaw, 03-195, Pol.
SO Journal of Radioanalytical and Nuclear Chemistry (2000), 245(2), 233-236
CODEN: JRNCDM; ISSN: 0236-5731
PB Kluwer Academic Publishers
DT Journal
LA English
AB **Optical** absorption by electrons **trapped** in natural anionic vacancies in NaCl was used for the construction of a dosimeter for radiation processing. To meet the demands of electron beam processing, characterized by congestion of isodoses, the active part of the dosimeter, i.e., the microcrystals of NaCl are embedded in a 0.3 mm thick polyethylene film, in which doses from 10 MeV electrons do not exceed ±2% difference in extreme parts of the dosimeter body. The dosimetric film is opaque and the absorbance at the wavelength λmax = 465 nm, i.e., the **maximum absorption** of the F band, is measured by diffuse reflected light spectrophotometry (DRS). The measurement is performed against the unirradiated film as reference, thus increasing the accuracy, by self-compensation of signals not belonging to the absorption of F-centers. The spectrum obtained in such a way is identical with that of F-centers in irradiated single NaCl crystals. The calibration curve of the height of the band is almost linear vs. the dose in the range of several tens of kilograys. As ordinary grades of NaCl may be used, the dosimeter developed is cheap and enables to map the irradiation field in objects of complicated geometry.
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
AN 1995:959015 CAPLUS
DN 124:17812
TI Instrumental configuration for direct measurement of optical absorption of ion cyclotron resonance mass-selected trapped ions
AU Huang, Yulin; Jackson, George; Kim, Hyun Sik; Guan, Shenheng; Marshall, Alan G.
CS Cent. Interdisciplinary Magnetic Resonance, Florida State Univ., Tallahassee, FL, 32306-4005, USA
SO Physica Scripta, T (1995), T59(Trapped Charged Particles and Related Fundamental Physics), 387-91
CODEN: PHSTER; ISSN: 0281-1847
PB Royal Swedish Academy of Sciences
DT Journal
LA English
AB Identification and structural anal. of gas-phase ions is presently based on methods similar to those used in condensed-phase chemical 75 yrs ago: namely, breaking the ion apart and weighing the fragments, and/or using chemical reactions to identify groups or reactive centers. For example, dissociation of mass-selected parent ions by (e.g.) collision-induced dissociation [CID], photodissocn., electron impact dissociation, surface-induced dissociation, etc., yields a product ion mass spectrum from which parent ion structure and bonding are indirectly inferred. Optical spectroscopy, however, can reveal directly the structure of the absorbing species. Directly measured optical absorption spectra of ions have yielded structures of a few

species, such as H3+. Most such expts. were carried out in a discharge tube although a few mass selected ion spectra were obtained in a fast ion beam. Here, the authors propose to conduct **optical** absorption expts. on mass-selected ions in an ICR ion **trap**; such expts. require that both **optical absorption** sensitivity and the **maximum** number of **trapped** ions be improved by an order of magnitude. To increase absorption sensitivity, the authors have chosen a newly developed cavity ring-down method which was previously demonstrated for visible spectra of neutrals. Using quadrupolar excitation and collisional cooling to axialize and mass-select ions in a multi-chamber **trap**, the authors hope to **trap** as many as 109 ions with an effective **optical** path length of 10,000 m, making it possible to detect ions of 10-16 cm2 absorption cross-section.

L13 ANSWER 3 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10
AN 1993:581408 CAPLUS
DN 119:181408
TI Effects of substitution of the median thiophene ring on the electrodeposition and structure of poly(terthienyls)
AU Roncali, Jean; Gorgues, Alain; Jubault, Michel
CS Lab. Mater. Mol., CNRS, Thiais, 94320, Fr.
SO Chemistry of Materials (1993), 5(10), 1456-64
CODEN: CMATEX; ISSN: 0897-4756
DT Journal
LA English
AB A series of α-terthienyls substituted at the β-position of the median thiophene ring by Me, octyl, and dioxaheptyl groups are prepared and their electrooxidn. and electropolymn. are studied with reference to unsubstituted α-terthienyl. The electrooxidn. process appears strongly dependent on the initial substrate concentration, and the emergence of a concentration-dependent addnl. oxidation wave between those corresponding to the formation of the cation radical and dication states suggests the occurrence of an aggregation process. Although substitution does not significantly affect the oxidation potential of the α-terthienyl system, the nature of the attached substituent strongly affects the electropolymn. process and the structure of the resulting material. Anal. of the electrochem. and **optical** properties of the various poly(terthienyls) by cyclic voltammetry and UV-visible absorption spectroscopy shows that the electropolymn. of all α-terthienyls is accompanied by the **trapping** of significant amts. of starting material in the film. Although α-terthienyl leads to a poorly conjugated polymer, the presence of long alkyl or oxyalkyl chains on the α-terthienyl system produces a several hundred millivolt decrease of the oxidation potential of the polymer and a 70-80-nm bathochromic shift of its **absorption maximum**, changes that are indicative of a considerable extension of conjugation. These results are discussed with regard to the specific reactivity of the α-terthienyl system and to the effects of substitution on the solubility of the electrooxidn. products.

L13 ANSWER 4 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 11
AN 1992:243934 CAPLUS
DN 116:243934
TI A coupled molecular dynamics and SCF-Xα-SW technique of calculations of optical absorption spectra of localized electron in molten mixtures of alkali halides
AU Wojcik, Mariusz; Bartczak, Witold M.; Kroh, Jerzy
CS Inst. Appl. Radiat. Chem., Tech. Univ., Lodz, 93-590, Pol.
SO Bulletin of the Polish Academy of Sciences, Chemistry (1991), 39(2), 181-90
CODEN: BPACEQ; ISSN: 0239-7285
DT Journal
LA English
AB Coupled mol. dynamics and quantum-chemical SCF-X α-SW techniques are

applied to calculate the optical absorption of solvated electron in molten alkali halides and their mixts. First step of the calcns. consists in the computer simulation of the system of alkali and halide ions plus a model anion which represents the solvated electron. The local ionic configurations around the model anion which are obtained by the simulation are then used as an input for the SCF-Xα-SW quantum-chemical program and the electron transition energies for these configurations are calculated The most probable trapping sites for an excess electron in molten KBr/LiBr systems are formed by the configurations of 3 cations. The calcns. of the ensemble-averaged energy of the **optical** transitions of the **trapped** electrons in the KBr/LiBr systems correctly reproduce the exptl. dependence of the **maximum** of **optical absorption** on the KBr/LiBr composition

L13 ANSWER 5 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 12
AN 1991:72146 CAPLUS
DN 114:72146
TI Pulse radiolysis of ethylene glycol and 1,3-propanediol glasses - I. Absorption spectra of trapped electrons
AU Bedekar, A. G.; Czerwik, Z.; Kroh, J.
CS Inst. Appl. Radiat. Chem., Tech. Univ., Lodz, 93-590, Pol.
SO Radiation Physics and Chemistry (1990), 36(6), 735-7
CODEN: RPCHDM; ISSN: 0146-5724
DT Journal
LA English
AB **Optical** absorption spectra of **trapped** electrons produced by pulse radiolysis in a glass matrixes of ethylene glycol (EG) and 1,3-propanediol (PD) were examined at 6, 90 and 150 K in the visible region. The end-of-pulse values of λmax for EG are 600, 550 and 530 nm at 6, 90 and 150 K resp., whereas for PD, the corresponding maximum are found at 620, 580 and 550 nm. Initial absorbance at maximum does not change with temperature in EG and PD except at 150 K while it increases in PD. The **maximum** of **absorption** for both diols shifts towards blue with increasing temperature and time. This is more evident in PD than in EG. The observed behavior can be due to the mol. structures of the 2 matrixes.

L13 ANSWER 6 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:530397 CAPLUS
DN 137:223463
TI Maximal atomic coherence via selective trapping of dressed states
AU Hu, Xiang-ming; Zhang, Jie-Peng; Xu, Zhi-zhan
CS Department of Physics, Huazhong Normal University, Wuhan, 430079, Peop. Rep. China
SO Physical Review A: Atomic, Molecular, and Optical Physics (2002), 65(6), 063812/1-063812/6
CODEN: PLRAAN; ISSN: 1050-2947
PB American Physical Society
DT Journal
LA English
AB Strong-field index enhancement was considered in 3-level systems in which there is a strong spontaneous decay from an auxiliary level into either of 2 states that the probe field couples. A control field is detuned resonant with the transition between the auxiliary level and 1 of the dressed states produced by the strong probe field. It is possible to achieve maximal atomic coherence, which characterizes an ultralarge index of refraction and vanishing absorption. This scheme is based on selective dressed population trapping, which is established by relying on the control field and the strong decay to transfer population from 1 dressed state to another through the auxiliary level. An advantage of the present scheme is that the conditions for its realization are accessible exptl.
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 7 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:622856 CAPLUS
DN 117:222856
TI Does the parent positive ion intervene in the fate of the incompletely relaxed trapped electron in irradiated polar liquids?
AU Jay-Gerin, J. P.; Ferradini, C.
CS Fac. Med., Univ. Sherbrooke, Sherbrooke, QC, J1H 5N4, Can.
SO Canadian Journal of Chemistry (1992), 70(6), 1869-71
CODEN: CJCHAG; ISSN: 0008-4042
DT Journal
LA French
AB A model is proposed concerning the influence of the parent pos. ion on the fate of the incompletely relaxed trapped electron (eir-) in irradiated polar liqs. This model is based on the release, by a tunneling and (or) a trap-hopping mechanism in the Coulomb field of the cation, of the electrons captured in preexisting shallow localized states below the bottom of the conduction band of the solvent. The released electrons would either recombine with the parent pos. ion or get retrapped. The net effect would be an accumulation of electrons in deeper traps. The removal of weakly **trapped** electrons would contribute to the decrease of the IR part of the **optical** absorption spectrum during the very early time dynamics of electron solvation. Such a process would imply, as a consequence, the existence of a **maximum** of the eir- **absorption** spectrum.

L13 ANSWER 8 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:124098 CAPLUS
DN 110:124098
TI Molecular dynamics simulation of the optical absorption spectrum of the hydrated electron
AU Romero, C.; Jonah, C. D.
CS Chem. Div., Argonne Natl. Lab., Argonne, IL, 60439, USA
SO Journal of Chemical Physics (1989), 90(3), 1877-87
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA English
AB The optical absorption spectrum of the hydrated electron was computed at 300 K using the Feynman path integral formulation of quantum statistical mechanics in conjunction with mol. dynamics simulations. In addition, the potential energy of the hydrated electron was studied at 700 K as a function of the liquid d. between 0.02 and 1.0 g/cm and correlated with the **maximum** of the **absorption** spectrum. The procedure to calculate the **optical** spectrum makes use of the solution of the Schroedinger equation fro an ensemble of model potentials which span the region allowed by the fluctuations of the potential well which **traps** the electron in thermodn. equilibrium The results indicate that the absorption band is due to a strongly allowed 1s → 2p transition and the breadth of the spectrum is a consequence of the fluctuations in the trap dimensions. Moreover, these calcns. imply that the long tail of the absorption spectrum in the UV arises from electrons which are in deep traps. Such traps occur with low but finite probability in the ensemble of solvent configurations which are accessible to the system in thermal equilibrium Calcns. of the average potential energy of the electron as a function of the d. reproduced well the measured shift in the absorption spectrum of the excess electron in water.

L13 ANSWER 9 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:66751 CAPLUS
DN 108:66751
TI Oxygen-trapped holes in acceptor doped potassium niobate
AU Possenriede, E.; Hellermann, B.; Schirmer, O. F.
CS Fachbereich Phys., Univ. Osnabruck, Osnabruck, D-4500, Fed. Rep. Ger.
SO Solid State Communications (1988), 65(1), 31-3
CODEN: SSCOA4; ISSN: 0038-1098
DT Journal

LA English
AB Under illumination with visible and near-UV light, Ti-doped KNbO3 shows ESR of O-**trapped** holes as well as a corresponding **optical absorption** band with **maximum** at .apprx. eV. In the most likely model, the hole wavefunction extends over 2 neighboring O ions next to Ti4+ substituting for Nb5+.

L13 ANSWER 10 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:224224 CAPLUS
DN 106:224224
TI ESR and electronic spectra of alkane radical cations formed in γ-irradiated 3-methylpentane and 3-methylhexane glasses containing alkane solutes
AU Ichikawa, Takahisa; Ota, Nobuaki
CS Dep. Appl. Phys. Chem., Hiroshima Univ., Higashi-Hiroshima, 724, Japan
SO Journal of Physical Chemistry (1987), 91(12), 3244-8
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB ESR and **optical** difference spectra on photobleaching are measured, and the radical cations from some higher alkanes (C9-C11) and some methyl-branched butanes are found to be **trapped** in 3-methylpentane or 3-methylhexane matrixes at 77 K. The ESR spectra show close agreement with those of radical cations produced in CCl2FCClF2 matrixes. The cations of methyl-branched butanes give the **absorption** bands with .lambda.**max** ranging from 300 to 260 nm; the bands are attributed to σ-localized cations, while the higher alkane cation bands appearing in the near-IR region are ascribed to σ-delocalized cations. The cations of higher alkanes were mobilized by light with λ > 900 nm to recombine with the neg. ions formed by electron scavenging.

L13 ANSWER 11 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:129064 CAPLUS
DN 106:129064
TI Electron-transfer reactions on cadmium selenide colloids as studied by pulse radiolysis
AU Dimitrijevic, Nada M.
CS Radiat. Lab., Univ. Notre Dame, Notre Dame, IN, 46556, USA
SO Journal of the Chemical Society, Faraday Transactions 1: Physical Chemistry in Condensed Phases (1987), 83(4), 1193-201
CODEN: JCFTAR; ISSN: 0300-9599
DT Journal
LA English
AB Optical effects due to size quantization were observed for CdSe colloids with particle diams. <50 Å. Electron-transfer reactions from different electron donors such as (CH3)2.ovrhdot.COH and .ovrhdot.CO2- radicals to CdSe colloidal particles were studied by pulse radiolysis. The **optical** properties of excess electrons show an **absorption maximum** at 300 nm which corresponds to **trapped** electrons and formation of Cd+ sites in the bulk and at the surface of semiconductor particles. Cd+ sites are not long-lived: they undergo further reduction to Cd0. The equilibrium of electron transfer between nitrobenzene anion radicals and CdSe colloidal particles in acetonitrile solution was also studied with pulse radiolysis. The equilibrium concentration of nitrobenzene anion radicals in the presence of CdSe colloids can be exploited to derive the redox potential of semiconductor colloids; a value of -1.20 .10.05V vs. SCE was determined

L13 ANSWER 12 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:439048 CAPLUS
DN 107:39048
TI Fast kinetics of the reactions of hydroxyl radicals with nitrone spin traps
AU Sridhar, R.; Beaumont, P. C.; Powers, E. L.

CS Biomembrane Res. Lab., Oklahoma Med. Res. Found., Oklahoma City, OK, 73104, USA
SO Journal of Radioanalytical and Nuclear Chemistry (1986), 101(2), 227-37
CODEN: JRNCDM; ISSN: 0236-5731
DT Journal
LA English
AB The technique of spin trapping with nitrone spin traps has gained wide acceptance as a method for estimating OH yields in ESR studies. Fast **optical** kinetic techniques applied to a series of these **traps** reveal relaxation spectra that indicate 2 **absorption maximum** with different time consts., with all except α-4-pyridyl-1-oxide-N-tert-Bu nitrone showing 2nd order behavior. These 2 spectral regions show different kinetics. Two reaction sites are indicated, only one of which is necessarily a mixture of initial OH when ESR methods are used. One other trap after OH reaction decays in one mode suggesting that its final product might be useful as a measure of initial OH. OH detection can be improved significantly by spin trapping α-hydroxyalkyl radicals formed by OH attack on alcs.

L13 ANSWER 13 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:564215 CAPLUS
DN 107:164215
TI Correlation of Fe4+ optical anisotropy, Brazil twinning and channels in the basal plane of amethyst quartz
AU Adekeye, Jacob I. D.; Cohen, Alvin J.
CS Dep. Geol. Planet. Sci., Univ. Pittsburgh, Pittsburgh, PA, 15260, USA
SO Applied Geochemistry (1986), 1(1), 153-60
CODEN: APPGEY; ISSN: 0883-2927
DT Journal
LA English
AB The biaxial absorption bands in amethyst quartz, with peaks at 2.28 eV and 3.54 eV related to Fe4+ and a peak at 3.02 eV-which is the A3 band related to the [AlO4]° **trapped** hole center, have orientations of **maximum** light **absorption** in the basal plane of Brazil-twinned r-growth sectors paralleling the planes of Brazil **optical** twinning. Absorption min. are at 90° to the maximum in all cases. The Brazil twinning planes always parallel the a-axes (1.hivin.210, etc.) of quartz and in many cases also parallel planes perpendicular to the r-faces (10.hivin.11, etc.). These are directions of channels in the quartz structure. The anisotropy ratio, σmax/σmin, of the Fe4+ band is that of the A2 absorption band in smoky quartz as would be expected if Fe3+ furnishes electrons to quench the trapped holes causing this absorption band. In the absence of the A1 and A2 absorption bands, the A3 absorption band width at half-maximum decreases from 1.43 to 0.36 eV indicating decreased charge-transfer character of the [AlO4]° center in the absence of the other types of Al trapped-hole centers in quartz. The key to the Brazil twinning in α-quartz are the channels which fill with large Fe3+ ions that force twinning to relieve strain in the structure. Amethyst color results only if Al is present substitutionally in the quartz as well as the interstitial Fe plus ionizing radiation.

L13 ANSWER 14 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1985:194325 CAPLUS
DN 102:194325
TI Effect of solution microstructure on the hydrated electron absorption spectrum
AU Kreitus, I. V.
CS Dep. Chem., Latvian State Univ., Riga, 226098, USSR
SO Journal of Physical Chemistry (1985), 89(10), 1987-90
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB The changes in the optical characteristics of pulse radiolytically generated electrons were measured in LiCl solns. in H2O and D2O at

21° over the range 0-15 M. Increasing the LiCl concentration causes a nonuniform increase of the energy of the eaq- **absorption** spectrum **maximum** and the half-width of the absorption band. More rapid changes in concentration regions corresponding to LiCl.6H2O and LiCl.4H2O are related to solution microstructure. The shift of the eaq- absorption spectrum is compared with the exptl. measured displacement of the eaq- conduction band. The latter, as well as changes of the electron hydration energy, is responsible for the observed differences in the eaq- absorption band with increasing LiCl concentration Spectral characteristics are analyzed from the positions of "**trap-trap**" and continuum concepts of **optical** excitation and from "cavity" and hydrated H2O- electron models.

L13 ANSWER 15 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1984:454340 CAPLUS
DN 101:54340
TI Radical pairs and trapped electrons in single crystals of pentaerythritol. An electron spin resonance and pulse radiolysis kinetic study
AU Nilsson, Goesta; Lund, Anders
CS Studsvik Sci. Res. Lab., Nykoeping, S-611 82, Swed.
SO Journal of Physical Chemistry (1984), 88(15), 3292-5
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB The rate of transformation of radical pairs to monoradicals in γ-irradiated single crystals of pentaerythritol, protonated or deuterated in the hydroxyl groups, was obtained by measuring the decay rate of the ESR signal of the radical pairs from 106 to 129 K. An isotope effect in the transformation rate was found and atom tunneling seems to be involved. A mechanism is proposed. Pulse radiolysis data have shown that there is an isotope effect also in the decay rate of the **optical** absorption of electrons **trapped** in the crystal. The activation energies are 6.7 and 9.0 kcal/mol and the **absorption max** . are at 430 and 510 nm for C(CH2OH)4 and C(CH2OD)4, resp. A second moment anal. of the ESR line of the electrons shows that they are most likely trapped in interstitial positions.

L13 ANSWER 16 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1985:53785 CAPLUS
DN 102:53785
TI Optical signs of the heterogeneity of the energy distribution of equilibrium solvated electrons in liquid and glassy ammonia-methanol mixtures
AU Zhigunov, V. A.; Khaikin, G. I.; Shornikov, V. V.
CS Inst. Elektrokhim., Moscow, USSR
SO Khimiya Vysokikh Energii (1984), 18(6), 514-19
CODEN: KHVKAO; ISSN: 0023-1193
DT Journal
LA Russian
AB The absorption spectra of solvated electrons (es) in MeOH solns. containing 0.12 and 0.16 mol fractions of NH3 were studied by using μs pulse radiolysis. The temperature dependence (120-314 K) of energy corresponding to the **absorption maximum** (Em) displayed a drop of .apprx.0.7 eV, and spectra in the vicinity of the drop were structured. The region of the drop shifted to a higher temperature with a decrease of NH3 concentration in the solution Increased photosensitivity of the shape and location of the **optical** spectrum of the electrons **trapped** (e+) in these matrices was also observed

L13 ANSWER 17 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1983:188944 CAPLUS
DN 98:188944
TI Electron trapping in alcohol clusters in γ-irradiated alcohol-2,2,4-trimethylpentane-2,2-dimethylbutane glasses at 77 K

AU Kimura, Toyoaki; Yasuda, Kazuhiro; Fukuda, Shigeki; Fueki, Kenji
CS Fac. Eng., Nagoya Univ., Nagoya, 464, Japan
SO Canadian Journal of Chemistry (1983), 61(3), 553-7
CODEN: CJCHAG; ISSN: 0008-4042
DT Journal
LA English
AB An **optical** absorption study was made on electrons (ealc-) **trapped** in alc. clusters in γ-irradiated PrOH-2,2,4-trimethylpentane (TMP)-2,2-dimethylbutane (DMB), BuOH-TMP-DMB, and 1-pentanol-TMP-DMB mixture glasses at 77 K. Hitherto electron transfer from the hydrocarbon region into alc. clusters was known to be a major process for ealc- formation in γ-irradiated alc.-hydrocarbon glasses. In the present systems, this type of electron transfer was not observed and the ealc- formation resulted only from the direct radiolysis of alcs. In the alc. concentration range <0.2 electron fraction the yields of ealc- were lower than those expected from the direct radiolysis of alcs. The average number of alc. mols. in a cluster in these systems was estimated to be 4 in the lower alc. concentration range studied. The position of the **absorption maximum** for ealc- in these systems was constant within exptl. uncertainties independent of alc. concentration, which was consistent with the results of a semicontinuum model calcn.

L13 ANSWER 18 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1982:76773 CAPLUS
DN 96:76773
TI An optical absorption study of trapped electrons in γ-irradiated 3-methylhexane-2,2,4-trimethylpentane-2,2-dimethylbutane mixture glasses at 77 K
AU Kimura, Toyoaki; Ogawa, Naoyuki; Fueki, Kenji
CS Fac. Eng., Nagoya Univ., Nagoya, 464, Japan
SO Bulletin of the Chemical Society of Japan (1981), 54(12), 3854-6
CODEN: BCSJA8; ISSN: 0009-2673
DT Journal
LA English
AB An **optical** absorption study was made on **trapped** electrons in γ-irradiated 3-methylhexane-2,2,4-trimethylpentane-2,2-dimethylbutane glasses at 77 K. The **absorption maximum** of trapped electron spectra shifts to longer wavelengths and the trapped electron yield decreases with decreasing 3-methylhexane concentration The observed spectral shifts were interpreted through a semicontinuum model calcn.

L13 ANSWER 19 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1979:112651 CAPLUS
DN 90:112651
TI ESR and optical absorption spectra of electrons trapped at 77 K in 6-20 M alkaline ice
AU Polevoi, P.; Plonka, A.
CS Inst. Appl. Radiat. Chem., Tech. Univ. Lodz, Lodz, Pol.
SO Radiochemical and Radioanalytical Letters (1978), 36(4-5), 235-43
CODEN: RRALAZ; ISSN: 0079-9483
DT Journal
LA English
AB For electrons **trapped** in alkaline ices, the changes in ESR spectra (decrease of g value, increase of half-width, and departure from the Gaussian form) and the changes in **optical** absorption spectra (red shift; of **maximum absorption**, increase of half-width) with increasing NaOH concentration indicate the increasing contribution of solvent-shared ion pairs. These ion pairs are less stable than electrons at 77 K one observes, beside slow decay, the reverse changes in the ESR and optical absorption spectra.

L13 ANSWER 20 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1978:180164 CAPLUS
DN 88:180164
TI The electron transfer processes in x-irradiated alkaline ice at 77 K
AU Kroh, J.; Mayer, J.; Polevoi, P.
CS Inst. Appl. Radiat. Chem., Lodz, Pol.
SO Proceedings of the Tihany Symposium on Radiation Chemistry (1977), Volume Date 1976, 4, 679-4
CODEN: PTSCDP; ISSN: 0134-126X
DT Journal
LA English
AB The effect of matrix composition on the yield of the **trapped** electrons and on the position of wavelength maximum (λ **max**) of their **optical absorption** spectra was studied in x-irradiated frozen aqueous NaOH solns. at 77 K. Some results concerning the trapped electron decay in the alkaline ice matrix with varying NaOH concentration in the presence of a scavenger are presented. The observed red shift of λ max for concentrated NaOH frozen solns. is explained by assuming the formation of new kind of traps probably involving NaOH mols. via hydrated pairs.

L13 ANSWER 21 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1975:610932 CAPLUS
DN 83:210932
TI Electronic spectra of trapping electrons in γ-irradiated organic-mixture glasses at 77.deg.K
AU Ito, T.; Ujikawa, N.; Fueki, K.
CS Fac. Eng., Nagoya Univ., Nagoya, Japan
SO Journal of Physical Chemistry (1975), 79(23), 2479-84
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB An **optical** absorption study was made of **trapped** electrons produced in γ-irradiated organic-mixture glasses at 77°K. Electronic spectra were observed for trapped electrons in a variety of binary-mixture glasses which consist of solvents with various polarity. Optical parameters obtained from the observed spectra are reported. The spectra of trapped electrons have the only one **absorption maximum** in all of the mixture glasses studied except for 2-propanol-3-methylpentane glass. The **absorption maximum** in the spectrum of trapped electrons in a mixed solvent is located at a wavelength between those in pure component solvents, the wavelength depending on the mixture composition There are 2 **absorption maxima** in the spectrum of trapped electrons in 2-propanol-3-methylpentane glass, each maximum corresponding to that in its component spectrum. Changes in the trapped-electron spectra with composition of the mixts. are interpreted in terms of the polarity and structure effects.

L13 ANSWER 22 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:579454 CAPLUS
DN 81:179454
TI Wavelength selective bleaching (burning holes) in the optical spectra of trapped electrons in organic glasses
AU Hager, S. L.; Willard, J. E.
CS Dep. Chem., Univ. Wisconsin, Madison, WI, USA
SO Journal of Chemical Physics (1974), 61(8), 3244-6
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA English
AB Exptl. evidence is given confirming that the broad **optical** absorption spectra of **trapped** electrons in glassy 3-methylpentane and methyltetrahydrofuran (MTHF) are convolutions of spectra of electrons **trapped** with different energies. Laser light of wavelengths near or to the red of the et - optical

absorption maximum selectively depopulates electrons which absorb at the bleaching wavelength, thus creating a hole in the et- spectrum. Some addnl. indications as to the spectral properties of the individual electrons are given by the observations that (1) illumination of et- produced in MTHF at 25°K with laser light to the blue of the **absorption maximum** results in nearly uniform bleaching throughout the spectrum; (2) et-produced in MTHF at 67°K and illuminated at 25°K with 1064 nm are bleached less efficiently then etproduced at 25°K and have a low probability of being shifted to traps typical of mobile electron trapping at 25°K; (3) the spectra of et- in MTHF are progressively red-shifted as the temperature at which they are produced is lowered from 97 to 10°K, and the resolution of the peaks observable in the spectrum produced at 72°K is lower for spectra of et-produced at higher (97°K) or lower (25 and 10°K) temps. Some implications of these observations are discussed.

L13 ANSWER 23 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1973:471761 CAPLUS
DN 79:71761
TI Electronic spectra of trapped electrons in organic glasses at 4.deg.K. V. Aliphatic amines
AU Ito, Toshiyasu; Fueki, Kenji; Namiki, Akira; Hase, Hirotomo
CS Fac. Eng., Nagoya Univ., Nagoya, Japan
SO Journal of Physical Chemistry (1973), 77(14), 1803-5
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB **Optical** absorption measurements were carried out on **trapped** electrons in aliphatic amine glasses at 4 and 77°K. A slight red shift or no shift of the absorption spectrum at 4°K relative to that at 77°K was observed for trapped electrons in several amines. The wavelength at the **absorption maximum** in the optical spectra at 77°K is generally correlated to matrix polarity. A comparison is also made between the efficiency of electron trapping at 4° and that at 77°K for some of the amines.

L13 ANSWER 24 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1973:22460 CAPLUS
DN 78:22460
TI Dissociative electron attachment to dimethyl ether in irradiated 3-methylpentane glass
AU Yoshida, Hiroshi; Irie, Masahiro; Shimada, Osamu; Hayashi, Koichiro
CS Fac. Eng., Hokkaido Univ., Sapporo, Japan
SO Journal of Physical Chemistry (1972), 76(25), 3747-50
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB The **trapped** electron in γ-irradiated 3-methylpentane glass containing Me2O shows an ESR spectrum of 3.7 G width and an **optical absorption** band with a **maximum** at 1250 nm. It is bleached with light of a wavelength <1170 nm. The photobleaching is followed by the formation of a Me radical. The conversion efficiency from a trapped electron to a Me radical is independent of the wavelength in the range examined (1170-600 nm). All exptl. results indicate that the Me radical is formed by dissociative electron attachment to Me2O which occurs only when the trapped electron is photobleached but does not occur during γ-irradiation According to gas-phase data, the reaction is expected to be endothermic by .apprx.0.7 eV, although this value may be decreased somewhat in the glassy matrix. Therefore, the results seem to lead to the amazing conclusion that all electrons detrapped by light have an appreciable amount of kinetic energy independent of the photon energy of the light.

L13 ANSWER 25 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1971:428075 CAPLUS
DN 75:28075
TI Trapped electrons in alkylamine glasses at 77.deg.K
AU Noda, Shoji; Fueki, Kenji; Kuri, Zenichiro
CS Fac. Eng., Nagoya Univ., Nagoya, Japan
SO Chemical Physics Letters (1971), 8(5), 407-8
CODEN: CHPLBC; ISSN: 0009-2614
DT Journal
LA English
AB The ESR linewidths (in G) between derivative maximum and the wavelengths (in nm) of the **optical absorption maximum**, resp., of **trapped** electrons in γ-irradiated alkylamine glasses were: for primary amines (e.g., 2-methyl-n-amylamine), 24-25, 1100-1200; for secondary amines (e. g., 3-methylpiperidine), 6-14, 1300-1400; for tertiary amines (e.g., Et3N), 3-4, 1650. The g values for the trapped electrons were ≈2.001. The radiochem. yields of the trapped electrons were ≈2, ≈0.9, and ≈0.4, resp., for the primary, secondary, and tertiary amines. The depths of the electron traps in the amines were in the order: primary > secondary > tertiary.

L13 ANSWER 26 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1972:52901 CAPLUS
DN 76:52901
TI Laser bleaching of trapped electron optical bands in γ-irradiated alkaline ice
AU Ho, Ken K.; Kevan, Larry
CS Dep. Chem., Wayne State Univ., Detroit, MI, USA
SO International Journal for Radiation Physics and Chemistry (1971), 3(3), 193-9
CODEN: IJRCA6; ISSN: 0020-7055
DT Journal
LA English
AB The **maximum** of the **optical absorption** band of **trapped** electrons in glassy alkaline ice at 77°K shifts to higher energy when the low-energy side of the band is optically bleached. This suggests that there is a distribution of ground-state energies for the trapped electrons and, consequently, a distribution of vacancy sizes in which the electrons are trapped. The fine structure of the broad absorption band has been probed by comparing laser bleaching at 633 nm with broadband monochromator bleaching at 633 nm. Although the laser linewidth is 750 times smaller than that of the monochromator light, the trapped-electron band shifts were equivalent, and it was not possible to bleach a narrow portion out of the broad band corresponding to a single narrow component or resolved single-energy trap depth. The width of the component optical band corresponding to a particular ground-state energy is broad rather than narrow. Laser bleaching in the low-energy tail of trapped electrons in KCl crystals caused uniform and symmetric bleaching consistent with a single trap depth.

L13 ANSWER 27 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1970:450579 CAPLUS
DN 73:50579
TI Correlation of ESR and optical spectra from five x-irradiated amino acids
AU Shields, Howard W.; Marsh, William; Hamrick, Phillip J., Jr.
CS Dep. of Phys., Wake Forest Univ., Winston-Salem, NC, USA
SO Journal of Chemical Physics (1970), 52(12), 6437-8
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA English
AB **Optical** absorptions near 250 (π-π*) and 350 (n-π*) nm can be used to characterize **trapped** radicals of the form RR'CCOOH in nonconjugated organic solids. Optical and ESR spectra were taken as functions of irradiation dose in 5 x-irradiated amino acid single crystals. **Absorption maximum** at 345 and 235 nm and ESR peaks in the spectra of alanine increased at the same rate. The **trapped**

radical MeCHCOOH gave rise to the **optical** absorptions. Similar results were obtained for malonic acid and succinic acid. These optical absorptions were absent in spectra of x-irradiated valine and leucine (in which the π system does not exist).

L13 ANSWER 28 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1971:26615 CAPLUS
DN 74:26615
TI Reactions of electrons and free radicals in glassy ethanol
AU Fujii, Susumu; Willard, John E.
CS Dep. Chem., Univ. Wisconsin, Madison, WI, USA
SO Journal of Physical Chemistry (1970), 74(25), 4313-19
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English
AB Expts. designed to increase understanding of the mechanisms of trapping and reaction of electrons and free radicals in γ-irradiated glassy EtOH at 77°K are reported. The concentration of electrons grows with increasing γ dose to a maximum at 6 + 1020 eV/g and then decreases, accompanied by a decrease in G (free radicals). Free radicals are produced during thermal decay of trapped electrons, as well as by photobleaching. There is a blue shift in the **optical absorption** spectrum (.lambda.**maximum** 535 nm) of **trapped** electrons during thermal decay, and also during photobleaching with 650-nm radiation, but not with 540 nm. Prolonged annealing of EtOH glass at 90°K prior to γ-irradiation alters the available trapping sites in such a manner that the trapped electron spectrum is shifted to the red, the yield is reduced, and the decay rate is increased. MeCHOH radicals produced in the radiolysis decay by 2nd-order kinetics. Parallel growth and decay of the ESR free-radical signal and absorption at 200 nm are consistent with the conclusion that the latter is in part attributable to free radicals.

L13 ANSWER 29 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1970:16614 CAPLUS
DN 72:16614
TI Temperature dependence of photocurrent in γ-irradiated alkaline ice. Location of energy levels of trapped electrons
AU Eisele, I.; Lapple, R.; Kevan, L.
CS Univ. of Kansas, Lawrence, KS, USA
SO Journal of the American Chemical Society (1969), 91(23), 6504-5
CODEN: JACSAT; ISSN: 0002-7863
DT Journal
LA English
AB Alkaline ice (10M NaOH), produced by rapid freezing to 77°K to form a transparent glass, was irradiated with 60Co γ-rays to a dose of 0.03 megarad to produce trapped electrons. This ice is characterized by an EPR singlet and an optical **absorption maximum** at 580 nm. The photocurrent shows that the trapped electrons can be optically excited to a mobile state. The temperature dependence at 4-77°K shows that the **optical** transition is from a bound ground state directly to the conduction band, and the temperature dependence at >77°K shows the presence of shallow **traps** near the conduction band.

L13 ANSWER 30 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:42738 CAPLUS
DN 70:42738
TI Effects of matrix polarity on the optical and electron spin resonance spectra of trapped electrons in organic glasses
AU Ekstrom, Alfred; Willard, John E.
CS Univ. of Wisconsin, Madison, WI, USA
SO Journal of Physical Chemistry (1968), 72(13), 4599-603
CODEN: JPCHAX; ISSN: 0022-3654
DT Journal
LA English

AB **Trapped** electrons produced by γ-irradiation of 13 organic glasses at 77°K. have **optical absorption maximum** (ev.) and E.S.R. line widths which increase smoothly with increasing polarity of the matrix mols., from 3-methylpentane (3MP) to glycerol, consistent with a model in which the electrons are **trapped** in preexisting cavities in the matrix, the size of cavities which stabilize the electrons decreasing with increasing polarity. **Trapped** electrons in mixts. of alcs. in the glassy state show only one **optical absorption maximum** This shifts from the energy characteristic of the 1st alc. to that of the 2nd as the mole fraction of the 2nd is increased, indicating that the alc. mols. are homogeneously mixed, and that each trapping site is composed of several mols. Trapped electrons in mixts. of normal propanol and 3MP in the glassy state show two electron absorption peaks, one characteristic of each pure species, with preference for trapping in the alc. phase, indicating aggregation of like mols.

L13 ANSWER 31 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1969:33160 CAPLUS
DN 70:33160
TI Electron spin resonance spectrum of the O-2 radical ion trapped in nonionic matrices at 77.deg.K
AU Bennett, John Edward; Mile, Brynmor; Thomas, Alun
CS Thornton Res. Center, Shell Res., Ltd., Chester, UK
SO Transactions of the Faraday Society (1968), 64(12), 3200-9
CODEN: TFSOA4; ISSN: 0014-7672
DT Journal
LA English
AB Trapped electrons are formed when alkali metal atoms are deposited on water or alcs. at 77°K. in the rotating cryostat. However, when trace amts. of O are also admitted during deposition, the deep color and characteristic E.S.R. spectrum of the trapped electrons are absent. Instead, the deposit is white and gives a highly asym. E.S.R. spectrum which has basically the same form in all of the solvents. However, the principal value g.dblvert. of the g factor varies slightly, but significantly, with the solvent in which the radical ion is trapped. Identical spectra in the corresponding solvents are observed from (a) frozen samples of water or alcs. which have been saturated with O and then irradiated at 77°K. with 60Co γ-rays; and also from (b) samples which have been prepared by rapidly stirring NaO2 into the solvent at room temperature and then immediately freezing the resultant slurry in liquid N (77°K). All of the E.S.R. spectra observed in these three groups of expts. arise from the O2- radical ion which is trapped by an assembly of solvent mols. similar to that postulated for electrons trapped in the same solvents. The variation of g.dblvert. with the solvent in which the radical ion is **trapped** is similar to that found for the energy of the **maximum absorption** in the **optical** spectra of electrons **trapped** in these solvents and reflects the degree of interaction between the ion and the solvent.

L13 ANSWER 32 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:501720 CAPLUS
DN 69:101720
TI Distinguishable electron traps in γ-irradiated n-propanol glass
AU Dainton, Frederick S.; Salmon, G. Arthur; Zucker, U. F.
CS Univ. Leeds, Leeds, UK
SO Chemical Communications (London) (1968), 19, 1172-4
CODEN: CCOMA8; ISSN: 0009-241X
DT Journal
LA English
AB Glassy PrOH samples (containing 2 volume % water) are γ-irradiated and an intense optical absorption is observed at 555 mμ. The absorption is assigned to et-. Changes in absorption at <104°K. are studied. The presence of **trapped** electrons which have a different

optical absorption maximum is shown by selective photobleaching.

L13 ANSWER 33 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:91805 CAPLUS
DN 68:91805
TI Nature of electron trapping in radiolysis of polar systems
AU Ershov, B. G.; Makarov, I. E.; Pikaev, A. K.
CS Inst. Fiz. Khim., USSR
SO Khimiya Vysokikh Energii (1967), 1(5), 472-9
CODEN: KHVKAO; ISSN: 0023-1193
DT Journal
LA Russian
AB **Optical** spectra of the absorption of **trapped** electrons in glass-forming alcs. and alc.-water solns. irradiated by γ-rays at -196° were studied. Photolysis with visible light at the wavelength longer than λmaximum causes a shift of the **maximum** of **optical absorption** of the **trapped** electron into the short wave region. The results obtained are accounted for through a localization of electrons in "cavities" of different sizes. Certain theories of the "cavity" are given to interpret the **optical** properties of solvated and **trapped** electrons. 42 references.

L13 ANSWER 34 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:73586 CAPLUS
DN 68:73586
TI Position of **optical absorption maximum** for an electron **trapped** in hypothetic glassy ice at 77°K
AU Ershov, B. G.; Makarov, I. E.; Pikaev, A. K.
SO Khimiya Vysokikh Energii (1967), 1(4), 404-5
CODEN: KHVKAO; ISSN: 0023-1193
DT Journal
LA Russian
AB The optical spectra of captured electrons in the mixts. water-ethylene glycol and water-glycerol, γ-irradiated at 77°K., were studied and the absorption maximum in hypothetical glassy ice was found. The absorbed dose was 4 + 1018 ev./ml., the dose rate 6.2 + 1015 ev./ml.-sec. In both mixts., the spectrum of optical absorption had 1 maximum With increasing concentration of the water, the maximum is smoothly shifted to the longwave region. The widening of the optical band of the absorption maximum in aqueous-alc. mixts. in comparison with ice can be explained by a wider set of sizes of cavities in these mixts. The greater are the sizes of the mols. of the medium, the wider is the set of the sizes of the cavities and the wider is the band of optical absorption of solvated or captured electrons. For the same polar substance, the optical band of the electron in the transition from the liquid phase to the glassy one narrows. For glassy ice at 77°K., it is 0.6-0.7 ev. The presence of a maximum shows that the composition of the nearest surrounding of the electron is proportional to the composition of the mixture This is the difference between these mixts. and ethanol-2-methyltetrahydrofuran glasses for which 2 maximum were found, i.e. for an electron captured in EtOH and for an electron captured in 2-methyltetrahydrofuran.

L13 ANSWER 35 OF 59 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1964:438955 CAPLUS
DN 61:38955
OREF 61:6753b-d
TI Thermal stability of color centers in a silicate glass
AU Stroud, J. S.
CS Corning Glass Works, Corning, NY
SO Physics and Chemistry of Glasses (1964), 5(3), 71-5
CODEN: PCGLA6; ISSN: 0031-9090

DT Journal
LA Unavailable
AB cf. CA 58, 1008c. A study of the thermal bleaching of the color centers of **optical** absorption produced by ultraviolet and x-ray irradiation on a binary silicate glass showed that between room temperature and 100° the **trapped** electron centers, with an **absorption maximum** of 250 mμ, causing the f1-band and the **trapped** hole centers with **absorption max** . near 620 mμ and 440 mμ, are thermally decomposed to supply some of the electrons that combine with Ce3+ centers. The trapped electron centers causing the f2-band with a **maximum absorption** near 230 mμ were thermally decomposed at 50 and 100° to supply some of the electrons that recombine with the thermally stable Ce3+ centers. Approx. one-quarter of the Ce3+ trapped electron centers and the (Eu3+ plus electron) trapped hole center absorptions were thermally stable up to 450 and 250°, resp. The center formed by the bleaching out of the 2 trapped hole center bands with **absorption max** . near 440 and 620 mμ resulted in an **absorption** band with a **maximum** near 500 mμ that was thermally stable up to 150°.

L13 ANSWER 36 OF 59 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 1
AN 2003:62866 SCISEARCH
GA The Genuine Article (R) Number: 628YF
TI Optical properties of segmented cyano-containing PPV-based chromophore for fluorescent sensing
AU Lee T S (Reprint); Na J; Lee J K; Park W H
CS Chungnam Natl Univ, Organ & Optoelect Mat Lab, Dept Text Engn, Taejon 305764, South Korea (Reprint); SK Corp, Daeduk Inst Technol, Taejon 305712, South Korea
CYA South Korea
SO OPTICAL MATERIALS, (JAN 2003) Vol. 21, No. 1-3, pp. 429-432.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0925-3467.
DT Article; Journal
LA English
REC Reference Count: 15
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB **Optical** metal ion responsive properties of segmented cyano-PPV derivative with pyridyl group are reported. The polymer solution in DMF exhibited **absorption maximum** at 346 nm and emission maximum at around 470 nm (excitation wavelength 346 nm). A new absorption was observed at 296 nm by addition of ferric and uranyl ions to the polymer solution presumably due to charge transfer interaction between polymer chain and metal ion. Consecutive fluorescence quenching was induced upon exposure to ferric ion. It is presumed that the metal ion binding leads to produce **trapping** sites for the excitation resulting in fluorescence quenching. (C) 2002 Elsevier Science B.V. All rights reserved.

L13 ANSWER 37 OF 59 SCISEARCH COPYRIGHT 2004 THOMSON ISI on STN DUPLICATE 2
AN 2003:833862 SCISEARCH
GA The Genuine Article (R) Number: 723EZ
TI Optical absorption and luminescence of 14-MeV neutron-irradiated CaF2 single crystals
AU Cooke D W (Reprint); Bennett B L
CS Los Alamos Natl Lab, Div Mat Sci & Technol, MST-8, MS E546, Los Alamos, NM 87545 USA (Reprint); Los Alamos Natl Lab, Div Mat Sci & Technol, Los Alamos, NM 87545 USA
CYA USA
SO JOURNAL OF NUCLEAR MATERIALS, (15 SEP 2003) Vol. 321, No. 2-3, pp. 158-164.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0022-3115.

DT Article; Journal
LA English
REC Reference Count: 16
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS
AB The effects of 14-MeV neutron irradiation (1.1 x 10(19) n/m(2)) on crystalline CaF2 have been examined by **optical** absorption and luminescence techniques to evaluate its suitability as a window material for fusion energy applications. For comparison, similar studies were done on unirradiated and X-irradiated samples. It is confirmed that pristine CaF2 exhibits excellent **optical** transmission in the spectral region 200-1000 nm. X and neutron irradiation induce similar **optical absorption** spectra with **maximum absorption** coefficients approximately 1.6 and 0.8 cm(-1), respectively. Thermally stimulated luminescence glow curves are induced by X-ray (11.55 kGy) and neutron exposures; peaks occur at 423, 534, 596 and 479, 550, 605 K, respectively. Thermal annealing experiments show that the major absorption peaks decay in concert with appearance of the first glow peak, which is attributed to an electron **trap.** Thus, the major absorption bands are associated with F and F-aggregate centers. The relative ease with which these centers are produced strongly suggests that CaF2 is not a good final optic window material for fusion energy applications.

L13 ANSWER 59 OF 59 LIFESCI COPYRIGHT 2004 CSA on STN
AN 90:103143 LIFESCI
TI Biophysics of complex systems, model of the interaction of the light-collecting antenna and the reaction centre on transfer of the energy of excitation in the B890 complex of Chromatium minutissimum .
AU Abdurakhmanov, I.A.; Danelius, R.V.; Razzhivin, A.P.
CS Inst. Soil Sci. and Photosyn., U.S.S.R. Acad. Sci. (Moscow Region), Vilnius State Univ., Vilnius, Russia
SO BIOPHYSICS., (1990) vol. 35, no. 1, pp. 108-112.
DT Journal
FS J
LA English
SL English
AB The kinetic curves of the changes in **optical** absorption at 860 nm in the B890 pigment-protein complex of Chromatium minutissimum on excitation at the logwave margin of the absorption band of the light-collecting antenna (930 nm) and close to the **maximum** of the **absorption** band of monomeric bacteriochlorophyll P800 of the reaction centre (800 nm) have been investigated. It is shown that in the first case the absorption band of the dimer of bacteriochlorophyll of the reaction centre bleaches with a time constant tau approximately equals 60 psec and in the second with tau approximately equals 1 psec with absence of signals due to excitation of the bacteriochlorophyll molecules of the antenna. It is concluded that in the B890 complex the reaction centre "almost irreversibly" **traps** the energy of excitation from the antenna.

=> log y

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